



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/824,999

04/15/2004

David Dosung Chun

AMKOR-103A

7239

7663

7590

06/21/2007

STETINA BRUNDA GARRED & BRUCKER
75 ENTERPRISE, SUITE 250
ALISO VIEJO, CA 92656

EXAMINER

THAI, LUAN C

ART UNIT

PAPER NUMBER

2891

MAIL DATE

DELIVERY MODE

06/21/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/824,999	Applicant(s) CHUN, DAVID DOSUNG	
	Examiner Luan Thai	Art Unit 2891	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3, 6-8, 11-13, 16-18 and 20, are rejected under 35 U.S.C. 102(b) as being anticipated by Jouvét et al. (4,501,960).

Regarding claims 1-3, 6-8, 11-13, 16-18 and 20, Jouvét et al. (see specifically figures 2-3) a method of fabricating a semiconductor device, comprising the steps of: providing a lead frame (12/18) having a die pad (12), a plurality of contacts (18) defining opposed top and bottom contact surfaces, and a plurality of conductive traces (16/17) which extend from respective ones of the contacts toward the die pad (see Fig. 3); attaching at least one semiconductor die (13) to the die pad (12) and electrically connecting the die to at least one of the conductive traces via bonding wires (14); forming a first body section (19) of plastic on the lead frame which at least partially encapsulates the semiconductor die (13) and the die pad (12) of the lead frame other than for the contacts (18) thereof; and forming a second body section (21/22) of plastic on the lead frame which partially encapsulates the contacts (18) such that at least portions of the bottom contact surfaces of the contacts (18) are exposed in an exterior surface of the second body section (21/22), wherein the first and second body sections are formed from a common plastic

material. Jouvett et al. further discloses the conductive traces being bent such that the die pad and the contacts extend along respective ones of generally parallel planes (Fig. 2), and the step forming the second body section such that the exterior surface thereof is generally planar and the bottom contact surfaces of the contacts are exposed in and substantially flush with the exterior surface, and wherein the second body section is abutted against the first side surface of the first body section.

3. Claims 1-3, 5-9, 11-13, and 15-20, are rejected under 35 U.S.C. 102(e) as being anticipated by Chuang et al. (US-2004/0084758).

Regarding claims 1-3, 5-9, 11-13, and 15-20, Chuang et al. (see specifically figures 1-3) a method of fabricating a semiconductor device, comprising the steps of: providing a lead frame (30) having a die pad (31), a plurality of contacts (35) defining opposed top and bottom contact surfaces, and a plurality of conductive traces (34) which extend from respective ones of the contacts toward the die pad (see Fig. 2B); attaching at least one semiconductor die (36) to the die pad (31) and electrically connecting the die to at least one of the conductive traces via bonding wires (37); forming a first body section (38) on the lead frame which at least partially encapsulates the semiconductor die (36) and the die pad (31) of the lead frame other than for the contacts (35) thereof; and forming a second body section (39) on the lead frame which partially encapsulates the contacts (35) such that at least portions of the bottom contact surfaces (350) of the contacts (35) are exposed in an exterior surface of the second body section (39), wherein the first and second body sections are formed from a common plastic material. Chuang et al. further discloses the conductive traces being bent such that the die pad and the contacts extend along respective ones of spaced, generally parallel planes (Figs. 1-2), and the step forming the second

Art Unit: 2891

body section such that the exterior surface thereof is generally planar and the bottom contact surfaces of the contacts are exposed in and substantially flush with the exterior surface, and wherein the first body section is defined a first sloped side surface the second body section is defined a second sloped side surface which is abutted against the first sloped side surface of the first body section and has an angle complimentary thereto (See Figs. 1 and 2E).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuang et al. (US-2004/0084758) in view of Glenn et al. (6,455,356 of record).

Regarding claims 4 and 14, Chuang et al. disclose the claimed invention as detailed above except for the conductive traces being etched to have a thickness, which is less than a contact thickness and the die pad thickness.

Glenn while related to a method of molding a chip on lead frame discloses (See Figs. 3-6) that the conductive traces (33) being etched to have a thickness, which is less than a contact thickness of the contacts (32) and the die pad thickness of the die pad (22). The purpose of doing so would have helped to prevent the die pad and the conductive traces from being pulled vertically from the package body (See Glenn's Abstract, lines 11+).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to recognize that applying Glenn's teachings to Chuang et al.'s invention would have been beneficial because it helps to prevent the die pad and the conductive traces from being pulled vertically from the package body.

6. Claims 4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jouvét et al. (4,501,960) in view of Glenn et al. (6,455,356 of record).

Regarding claims 4 and 14, Jouvét et al. disclose the claimed invention as detailed above except for the conductive traces being etched to have a thickness, which is less than a contact thickness and the die pad thickness.

Glenn while related to a method of molding a chip on lead frame discloses (See Figs. 3-6) that the conductive traces (33) being etched to have a thickness, which is less than a contact thickness of the contacts (32) and the die pad thickness of the die pad (22). The purpose of doing so would have helped to prevent the die pad and the conductive traces from being pulled vertically from the package body (See Glenn's Abstract, lines 11+).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to recognize that applying Glenn's teachings to Jouvét et al.'s invention would have been beneficial because it helps to prevent the die pad and the conductive traces from being pulled vertically from the package body.

The following reference is cited as of interest to this application:

U.S. Pat. No. 6,049,463 to O'Malley et al. is cited for showing method of fabricating a memory card similar to Jouvét and Chuang.

Art Unit: 2891

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luan Thai whose telephone number is 571-272-1935. The examiner can normally be reached on 8:00 AM - 4:30 PM, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bradley W. Baumeister can be reached on 571-272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Luan Thai

Primary Examiner

Art Unit 2891

January 29, 2007